

MCS-12

Engine Room

Hot & Cold Checks/Tests

INSTALLED FIREFIGHTING EQUIPMENT	LOA	IA
Halon MRC Q-1R demonstration		
Halon MRC 18M-3R demonstration		
Halon bottle cal stickers, pressure, piping/nozzle integrity		
Halon actuation station integrity		
AFFF system operational test		
AFFF hosereel/nozzle operation		
Refractometer test (MIP 5551)		
Valve alignment/labeling		
Concentrate level in tank		
Space cutouts locked open		
AFFF hosereel activation stations		
Ellison door closure/Escape trunk lighting		

Main Engine	LOA	IA
	NR 1 ME	NR 1 ME
Three point check		
Lube Oil sump level indicator		
Low Lube Oil Pressure Alarm		
Standby/Emergency LO Pump auto-start		
LO Pump Sequencing		
Unloader operation		
Operation of turning gear and shaft locking device		
Guarding valve remote operation		
Cycle ahead and astern throttle through full travel		
Wrong direction alarm		
EOT and ROT transmitter operation		
Operation of gland exhaust fan		
Shift, Inspect, and Clean Lube Oil Strainer (verify strainer basket integrity; vent valve, drain valve, equalizing valve operation; plug cock leakage; shafting interlock; differential		
Spray shield integrity		
Test L/O high differential pressure alarm		
Automatic LO temperature controls		
Gland seal regulator in parameter		
Vent fog precipitator operation		

Legend: * = Check required on all equipment.
 X= Check required for exam type
 O = Observe during assessment

SHIP'S SERVICE TURBINE GENERATOR	LOA	IA
	Nr 2	Nr 2
Manual Trip		
Low LO Trip		
Backpressure Trip		
Low LO alarm		
Operation of elect LO pump and manual LO pump		
Sample lube oil, sump level, dipstick		
Rotor position, bearing temps, oil flow through SFIs		
Vent fog precipitator operation		
Alarm panel		
Gland seal operation		
Operation of Aux Circ Pump and Aux Cond Pump		
Shift, Inspect, and Clean Lube Oil Strainer. (Lube oil strainer spray shield integrity, plug cock leakage, differential pressure, interlocks.)		
Airbox telltale drains, temp alarms		
Overspeed Trip (manual trip must be demonstrated first)		
Reverse power relay trip operation		
Governor high and low speed stops (generator not overspeed before reaching the high speed stop)		

MAIN CIRCULATING WATER SYSTEM	LOA	IA
	NR1	NR1
Sea valve automatic/remote operation		
Pump run direction of rotation correct		
Emergency bilge suction valve operation		
Local start/stop high/low speed controller function		
Remote start/stop high/low speed controller funct.		
Pump SLG for freedom of movement		
Pump SLG operation		
Pump low LO trip restart (secure steam to operating pump, when pump stops, reapply steam. Pump should <u>not</u> start without resetting the trip handle)		

Legend: * = Check required on all equipment.
X= Check required for exam type
O = Observe during assessment

AUXILIARY TURBINE DRIVEN EQUIPMENT	LOA	IA
	NR1 SLOP	NR1 SLOP
SLG freedom of movement		
Position of overload nozzle		
Turn pump by hand		
SLOP idle set point		
SLG at set point		
Constant speed governor proper operation		
Manual/emergency trip valve operation		
Low LO pressure trip restart feature		
Pump running in parameters		

MAIN SHAFTING	LOA	IA
Stern tube flushing and cooling water supply, filtering system, and leak-by.		
Inflatable seal air/CO2 supply		
Inflatable boot operation		
Test shaft seal high/low pressure alarm		
Shaft coupling guards, slip ring and brush rigging condition, bulkhead seals		
Line shaft bearing sump level, dip-stick, oiler ring inspection, security seals, labels (IC, BC, date), lube oil sample		

MAIN CONDENSATE PUMPS	LOA		IA	
	NR 1A	NR 1B	NR 1A	NR 1B
Run direction of rotation				
Start/stop Controller function				

MAIN SWITCHBOARDS & DISTRIBUTION PANELS	LOA	IA
Ground Check		

AUTOMATIC / MANUAL BUS TRANSFERS	LOA	IA
ABT operation in both automatic and manual modes		
Shift MBT, check manual interlock (both sources available)		

SALINITY ALARM PANELS	LOA	IA
Salinity panel meter calibration test		
Salinity panel alarm set points		
Evaporator automatic dump valve set point		
Alarm panel silent alarm test		
Alarm panel circuit failure test		

Legend: * = Check required on all equipment.
X= Check required for exam type
O = Observe during assessment

ELECTRIC FIRE PUMPS

	LOA		IA	
	NR 4	NR 5	NR 4	NR 5
Electric pump local & remote start/stop				
Suction/discharge valve local/remote operation				
Check-valve pack leakage (no backwards pump rotation)				

LOW PRESSURE AIR SYSTEMS

	LOA	IA
	NR 3	NR 3
Compressor auto-start load/unload		
Low LO shut-down		
Low LO time-delay		
Compressor shut-down (high temp shut-down can be checked by removing the stage cannon plug)		
Low control air alarm		
Compressor lead/lag settings		

MAIN DRAINAGE SYSTEM

	LOA	IA
Align and operate eductor		
Eductor capable of drawing vacuum IAW		
Bilge suction strainers		
Cycle main drains at local and remote stations (all)		

AIR PILOT/DIAPHRAGM OPERATED VALVES

	LOA	IA
Manually stroke, check for binding		

VENTILATION

	LOA	IA
Indicator lights		
Start/stop and high/low from local station		
Start/stop and high/low from remote station		

DISTILLING PLANT

	LOA		IA	
	NR 1	NR 2	NR 1	NR 2
All pumps operating correctly				
Dump valve set point/automatic function				
Operating in parameters (temp/press/salinity)				

Legend: * = Check required on all equipment.
 X= Check required for exam type
 O = Observe during assessment

AUXILIARY MACHINERY COOLING WATER	LOA	IA
AMCW Pump direction of rotation/output pressure		
AMCW Pump local/remote start/stop controller function		
Emergency reducer on line, able to maintain set-point		

MAIN SHAFTING

	LOA	IA
Stern tube flushing and cooling water supply, filtering system and leak by		
Line shaft bearing sump level, oiler ring inspection		
Inflatable boot operation		
Inflatable seal air/CO2 supply		

Legend: * = Check required on all equipment.
 X= Check required for exam type
 O = Observe during assessment

MCS-12

Fire Room

Hot & Cold Checks/Tests

INSTALLED FIREFIGHTING EQUIPMENT	LOA	IA
	Fwd	Fwd
Halon MRC Q-1R demonstration		
Halon MRC 18M-3R demonstration		
Halon bottle cal stickers, pressure,		
Halon actuation station integrity		
AFFF system operational test		
AFFF hosereel/nozzle operation		
Refractometer test (MIP 5551)		
Valve alignment/labeling		
Concentrate level in tank		
Space cutouts locked open		
AFFF hosereel activation stations		
Ellison door closure/Escape trunk lighting		

BOILER BURNER FRONT	LOA		IA	
	NR 1A	NR 1B	NR 1A	NR 1B
Quick closing valves remote				
Accumulator isolation valve remote				
Burner root valve/SSD/ball check leakage				
Three-way valve operation and marking				
FO control valve/micrometer valve proper				
Air register freedom of movement				
Steam smothering system alignment				
Air casing lighting				
Steam atomization temperature				
Test BID ac/dc power supply and				
Bottom blow valve fasteners, orifice caps				
Periscope lighting and alignment				
Sufficient number of burner barrels and				
Sample cooler preservation, operability,				
Soot blower element rotation/freedom of				
Main/Aux steam stom cycle				
Safety valve yoke clearance, lifting fork				
Pri/Sec RWLI tracking high/low water				
Boiler gage glass isolation valves &				
Sliding foot freedom of movement				

FUEL OIL SERVICE SYSTEM	LOA			IA		
	NR 1A	NR 1B	NR 1E	NR 1A	NR 1B	NR 1E
Electric FO pump local/remote shutdown						
Electric FO pump discharge unloader						
Shift/clean FSFOS						
Check FSFOS ball valve leakage						

Legend: * = Check required on all equipment.

X= Check required for exam type

O = Observe during assessment

MAIN FEED PUMPS	LOA			IA		
	NR 1A	NR 1B	NR 1C	NR 1A	NR 1B	NR 1C
MFP low suction trip (normally 3 psi apart)						
MFP low lube oil trip & alarm, hand lube oil						
MFP low suction trip, pump rollover						
MFP SLG operation						
MFP overspeed trip operation						
MFP constant pressure regulator						
EMERGENCY FEED PUMP						
	NR 1E			NR1E		
Emergency feed pump able to support boiler operation						

MAIN FEED BOOSTER PUMPS	LOA			IA		
	NR 1A	NR 1B	NR 1C	NR 1A	NR 1B	NR 1C
MFBP low discharge pressure alarm						
MFBP auto-start						
MFBP operating within normal parameters						

FORCED DRAFT BLOWERS	LOA		IA	
	NR 1A	NR 1B	NR 1A	NR 1B
Shutter freedom of movement, capability to				
Electric light-off blower operation/shutter				
	NR 2A	NR 2B	NR 2A	NR 2B
Shutter freedom of movement, capability to				
Electric light-off blower operation/shutter				

AUTOMATIC BOILER CONTROLS	LOA	IA
	NR 1	NR 1
Operation/tracking of all final control		
Operation of master/element air locks,		
All control element fail positions correct		
Minimum signal selector (up ramp, FO		
ACC & FW control stability in automatic		
MFP recirc valve operation		

DEAERATING FEED TANK	LOA	IA
	NR 1	NR 1
High/low water alarms (not on LPD)		
Operability of the MUF and dump valves		
Upper/lower shell temperatures in		
D.O. test satisfactory, less than 15 ppb		
Aux exhaust system valve sequencing		

SALINITY ALARM PANELS	LOA	IA
Salinity panel meter calibration test		
Salinity panel alarm set points		
Alarm panel silent alarm test		
Alarm panel circuit failure test		

Legend: * = Check required on all equipment.

X= Check required for exam type

O = Observe during assessment

FIRE ROOM REMOTE OPERATORS	LOA	IA
Cycle boiler stops at local and remote		
Cycle FO cut-outs at local and remote		

MAIN DRAINAGE SYSTEM	LOA	IA
Align and operate eductor		
Cycle main drains at local and remote		

AIR PILOT/DIAPHRAGM OPERATED VALVES	LOA	IA
Manually stroke, check for binding		

FUEL OIL TRANSFER SYSTEM	LOA	IA
FOTP operation/demonstrate FO transfer		

BILGE & STRIPPING SYSTEM	LOA	IA
Align and perform token stripping of FO		
Align and perform token pumping of bilge		

OIL LAB	LOA	IA
Conduct a thief sample on fuel oil service		
Conduct dissolved Oxygen test on DFT.		
Conduct Hydrazine test on DFT.		
Sample and test Boiler.		

FRESH WATER DRAIN COLLECTION TANK	LOA	IA
Pump Operation		
Pump Sequencing		
Tank level controls		

MAIN SWITCHBOARDS & DISTRIBUTION PANELS	LOA	IA
Ground Check		

AUTOMATIC / MANUAL BUS TRANSFERS	LOA	IA
ABT operation in both automatic and manual modes		
Shift MBT, check manual interlock (both sources available)		

VENTILATION	LOA	IA
Indicator lights		
Start/stop and high/low from local station		
Start/stop and high/low from remote station		

Legend: * = Check required on all equipment.

X= Check required for exam type

O = Observe during assessment

AUXILIARY TURBINE DRIVEN EQUIPMENT FIRE PUMPS	LOA		IA	
	NR 3	NR 4	NR 3	NR 4
SLG freedom of movement				
Position of overload nozzle				
Turn pump by hand				
SLOP idle set point				
SLG at set point				
Constant speed governor proper operation				
Manual/emergency trip valve operation				
Low LO pressure trip restart feature				
Pump running in parameters				

SHIP'S SERVICE TURBINE GENERATOR	LOA	IA
	NR 1	NR 1
Manual Trip		
Low LO Trip		
Backpressure Trip		
Low LO alarm		
Operation of elect LO pump and manual LO pump		
Sample lube oil, sump level, dipstick		
Rotor position, bearing temps, oil flow through SFIs		
Vent fog precipitator operation		
Alarm panel		
Gland seal operation		
Operation of Aux Circ Pump and Aux Cond Pump		
Shift, Inspect, and Clean Lube Oil Strainer. (Lube oil strainer spray shield integrity, plug cock leakage, differential pressure, interlocks.)		
Airbox telltale drains, temp alarms		
Overspeed Trip (manual trip must be demonstrated first)		
Reverse power relay trip operation		
Governor high and low speed stops (generator not overspeed before reaching the high speed stop)		

Legend: * = Check required on all equipment.

X= Check required for exam type

O = Observe during assessment

MCS-12

NR 1 AND 3 PUMPROOMS AND AIR COMPRESSOR ROOMS HOT AND COLD CHECKS

LOW PRESSURE AIR SYSTEMS

	LOA		IA	
	NR 1	NR 2	NR 1	NR 2
Compressor auto-start load/unload				
Low LO shut-down				
Low LO time-delay				
Compressor shut-down (high temp shut-down can be checked by removing the stage cannon plug)				
Low control air alarm				
Compressor lead/lag settings				

HIGH PRESSURE AIR COMPRESSORS

NR 1 HPAC is in a separate room next to the QD. Nr 2 is in the elevator machinery room 3-91-1-Q.				
	LOA		IA	
	NR 1	NR 2	NR 1	NR 2
Compressor auto-start load/unload				
Compressor shutdown				
Low lube oil shutdown				
Low lube oil delay				

MAIN DRAINAGE SYSTEM

	LOA			IA		
	Nr 1 P/R	Nr 2 P/R	Nr 3 P/R	Nr 1 P/R	Nr 2 P/R	Nr 3 P/R
Align and operate eductor						
Cycle main drains at local and remote						

ELECTRIC FIRE PUMPS

	LOA		IA	
	NR 1	NR 2	NR 1	NR 2
Electric pump local & remote start/stop				
Suction/discharge valve local/remote operation				
Check-valve pack leakage (no backwards pump rotation)				
Pump auto-start capabilities				
	NR 7	NR 8	NR 7	NR 8
Electric pump local & remote start/stop				
Suction/discharge valve local/remote operation				
Check-valve pack leakage (no backwards pump rotation)				
Pump auto-start capabilities				

FUEL OIL TRANSFER SYSTEM

NR 1 FOTP	LOA	IA
Start and place on-line IAW EOP		
Mechanical Seal leakage		

BILGE AND STRIPPING PUMP

	LOA	IA
Perform token strip of F/O service tank.		
Perform token strip of bilge.		

MCS-12

Auxiliaries

Hot & Cold Checks/Tests

INSTALLED FIREFIGHTING EQUIPMENT EGD SPACES	LOA		IA	
	FWD	AFT	FWD	AFT
Halon MRC Q-1R demonstration				
Halon MRC 18M-3R demonstration				
Halon bottle cali stickers, pressure,				
Halon actuation station integrity				
AFFF system operational test				
AFFF hosereel/nozzle operaion				
Refractometer test (MIP 5551)				
Valve alignment/labeling				
Concentrate level in tank				
Space cutouts locked open				
AFFF hosereel activation stations				

EMERGENCY GENERATOR & SWITCHBOARD	LOA		IA	
	FWD	AFT	FWD	AFT
Generator "drop test", ability to assume				
Generator manual trip				
Generator overspeed trip				
Generator low lube oil alarm/trip				
Generator remote shutdown device				
Generator JW high temp alarm				
Generator JW expansion tank low level				
Generator Barring device interlock				
Generator Pre-lube pump operation				
SICLOS lube oil strainer				
Obtain and test jacket water sample				
Obtain and test lube oil for dilution/acidity				
Generator Pedestal bearing high temp				
Generator space CO2 flooding				
Generator salt water circ pump operation				
Generator emergency salt water reducing				
Check emergency switchboard for grounds				
Generator day tank level				
Space ABT operation				
Generator operating at normal				

MAIN DRAINAGE SYSTEM	LOA		IA	
	FWD	AFT	FWD	AFT
Align and operate eductor				
Cycle main drains at local and remote				
Cycle firepump suction/discharge at local				

Legend: * = Check required on all equipment.
 X= Check required for exam type
 O = Observe during assessment